scarcely injured at all, while those with a more *deliquescent* branching suffered the loss of nearly all their branches.

Elms usually bent their branches until supported on the ground. Maples (*Acer dasycarpum* Ehrh.) acted very nearly as the Cottonwoods did, some breaking, while others withstood the strain. No hackberries (*Celtis occidentalis* L.) broke at all, their strong branches with axillary angles of nearly 90° rendering them strong enough to withstand the heaviest weight.

White pines (*Pinus strobus* L.) suffered more than the Scotch and Austrian pines, the latter having (when young) more widely divergent branches than the former. Red Cedars and Balsam Firs trailed their lower branches upon the ground, while those above hung and rested upon those below.

An attempt was made to estimate the weight borne by each tree, and the result showed that such ice burdens are very generally overestimated. By melting the ice from a measured length of a twig, it was easy to estimate the amount of water carried by the tree. It was found that for a fine box elder, twenty-five feet in height, and with a large rounded top fully twenty-five feet in diameter, the total weight did not exceed three hundred pounds. The calculation was carefully revised, because the result seemed too small, but it was found to be correct. The effects which are so striking are clearly due to the fact that this weight, although so small, is borne as well by the slender twigs as by the larger branches. A weight of a few ounces upon the end of a long twig produces a much greater bending than many pounds would at its base. — *Charles E. Bessey.*

ZOOLOGY.

Sponges and Cœlenterates of Australia.—Dr. R. von Lendenfeld has published a résumé of the facies of the Australian Cœlenterate fauna (*Biol. Centralbl.*, Jan. 1, 1888). Australia is especially rich in sponges, containing no less than seventy per cent. of the known species of horn-sponges, Chalinas and Desmacions. Of the two first-mentioned groups, five hundred and seventy-five species and varieties have been described from all parts of the world; and of these, no less than four hundred and fourteen have been recognized in Australian waters. At least forty or fifty per cent. of the horn-sponges of any other region may be found in Australia; and this is not limited by distance or any other barrier. But the Australian horn-sponge fauna is most nearly related to those of Atlantic North America and of East Africa, the fauna of the Northern Indian Ocean differing more from that of Australia than does that of our own coast. Dr. von Lendenfeld regards the Monoxonous Tethyoid sponges as derivations of the Tetraxonia,

and says that in Australia almost all of the Tetraxonia have developed into the Tethyoid type. He does not agree with Ridley and Dendy in their views of the origin of the horn-sponges, but regards this group as having a polyphylitic origin. The Australian Calc-sponge fauna is very rich, while the deep-sea Hexactinellidæ and Lithistidæ are wanting.

His conclusions regarding the sponges are:—(1) The littoral sponges are widely distributed, about half the species being cosmopolitan; (2) The most recent and most highly-developed forms rarely occur in the colder waters, and their relative numbers is in proportion to the coldness of the sea; (3) Newer forms follow the older, not only when we go from the deeper to the more littoral zones, but from the poles to the tropics; (4) The lower and older types are more plenty in the cold than in the warmer seas, and are especially rare in Australia; (5) There are a series of forms which are confined to Australia, but there is only a few which are confined to any other region; (6) All the larger genera are cosmopolitan; (7) The fresh-water sponges are more uniform and more widely-distributed than are the marine sponges.

New England Medusæ.—Dr. J. W. Fewkes presents (*Bulletin Mus. Comp. Zool.*, xiii.) a list of the Medusæ which he has studied on the coasts of Maine and Grand Menan. The list embraces fifteen species and is illustrated by six plates. A full account is given of *Nanomia cara*, supplementing the account of Dr. Alexander Agassiz, showing that these forms really possess both sexes united in one colony, and giving an account of the embryos up to the eight-cell stage. The rare *Callinema ornata* is also figured and described. The most interesting form mentioned in the paper is a curious parasitic hydroid, for which a new genus and species (*Hydrichthys mirus*) is established, which was found at Newport, R. I. Attached to the side of a specimen of the fish *Seriola zonata* was found a colony of the hydroid, which, in captivity, gave off numbers of the medusa stage. The colony is attached to the fish by a leathery basal plate or hydrorhiza, much like that of Hydractinia. From this arise the branching, naked colony, with its numerous medusa-buds. The hydranths are without tentacles; and Dr. Fewkes thinks the hydroid a true parasite, taking its food by means of the anastomosing canals in the basal plate. Numbers of the medusæ were hatched which passed through a two-tentacled (Stomatoca) stage into one (Sarsia) with four tentacles, but it was not possible to rear them further. Dr. Fewkes compares this form with both the Tubularians and Velella. The relationship seems clearly to be with the former; and the similarities of the form to the Siphonophores are scarcely more evident than are those of any of the Hydromedusæ.

NEW TYPE OF HYDROID DEVELOPMENT.—Dr. W. K. Brooks, in the Johns Hopkins *Circular*, No. 63, describes a peculiar type of multiplication in a species of Oceania, studied in the Bahamas. Its hydroid larva is a small, abundant campanularian, which gives rise to a small medusa with eight marginal tentacles and four rudimentary radial reproductive organs. Some of these medusæ had, growing out from the reproductive organs into the cavity of the bell, true hydroid reproductive organs with chitinous cups (medusæ buds), and all exactly like those on true hydroid colonies. The blastostyles are peculiar, in that they differ from all other buds, in that this is a case of an adult budding larvæ [the abstractor adopts the views of Claus, Boehm, and Brooks as to the relationships of hydroid and medusæ], and that, while these buds have their ectoderm continuous with that of the parent, the entoderm is distinct and is seen to arise from the cells of the reproductive organs; and after these buds are formed, they are nourished at the expense of the reproductive cells of the medusæ. This type seems to be a peculiarly modified type of gemmation rather than an instance of sporogenesis, like that lately described by Metschinkoff in a species of Cunina.

DEVELOPMENT OF BRAIN CORAL.—Mr. H. V. Wilson has studied the development of *Manicina areolata* (J. H. U. *Circular*, No. 63). The eggs are fertilized and undergo their early development in the body of the parent, beginning free life as solid planulæ, with beginning œsophageal invagination. The germ-layers are earlier formed by delamination, and now the endoderm begins to absorb the bottom of the œsophageal in-pushing and to form the permanent entoderm. The processes of formation of mesenteries and filaments is complicated, consisting in a pressing down of the entoderm and a successive application of the sides of the œsophagus to the ectoderm of the body in the various mesenterial planes. The filaments then arise as ectodermal lobes growing down along the body-wall from the inner extremity of the œsophagus. The entoderm later grows up under these, and thus arise all the mesenteries. The process of providing the incomplete mesenteries with filaments is more complex. The order of origin of the mesenteries differs from that of Lacaze Duthiers. The free life varies from a week to six or eight. They then settled down, and the basal ectoderm secreted a small calcareous plate. It was not possible to rear them beyond this point. Young polyps a quarter of an inch across had twelve septa developed; and it is noticeable that the edges of these were toothed, the teeth protruding through the external wall.

Mr. Wilson's observations go far to demonstrating the homologies between the Actinozoa and the Scyphistoma stage of Aurelia, as described by Götte.

Muscles of Molluscs.—There are frequently described in molluscs striated muscles, sometimes of a peculiar type. Müller and Keferstein have described them in the heart of Cephalopods and in the pharynx of the Cephalophora; Blanchard, in the adductors of Pecten, and Paneth, in the fins of Pteropods and Heteropoda. Schwalbe has described in the adductors of the lamellibranchs and elsewhere muscles with a double oblique striation, while, before him, Mettenheimer, Wagener and Margo had referred to the same appearance as spiral striation. Lately, Fol (*Comptes Rendus*, Jan. 23, 1888) has investigated the same subject, and concludes that true striated muscles do not exist in any mollusc. All cases reported as such, in reality, consist of smooth fibres, around which fine fibrils are rolled in a spiral manner, this being the case in all the special instances noted above. The method employed by Paneth (glycerine and nitric acid) produced such contraction that the spiral fibrillæ really appeared transverse. All of the molluscan muscles are of the smooth type; but these are to be grouped in two sub-divisions—that already mentioned, and that in which the fibrillæ are straight. The latter are the more abundant. Judging from their distribution, the spiral type are of value where a rapid contraction is needed.

The Primary Groups of Mail-cheeked Fishes. — A recent study of the structural characteristics of the mail-cheeked fishes has led to some interesting and unexpected results. The genus *Dactylopterus*, which has been almost universally closely associated in the same family with *Trigla* or *Peristedion*, and especially with the latter, was found to differ very widely. The relative proportions of the spinous and soft parts of the dorsal fin, to which so much value has been attributed by Dr. Günther, proves to be of comparatively slight importance. All the families recognized by Dr. Günther, except that of the Heterolepidotidæ, are very unnatural combinations of dissimilar groups; most of those recognized by myself are amply justified by anatomical evidence, but several others must be added to the list.

The genius of Cuvier, manifested in the perception of the relations of forms differing so much in superficial characteristics as do the mail-cheeked fishes, is justified by a detailed study of the various constituents of that group. The course of Günther and his followers in disintegrating it, widely divorcing its constituents, and associating its fragments with dissimilar forms, was a decidedly retrograde step. Nevertheless, although the group is one whose members are genetically connected, the diversities of structure are too great to allow of their retention in one family or even superfamily. They must be distributed into four (and ultimately more) superfamilies; those now determined are the Scorpænoidea, the Cottoidea, the Trigloidea, and the Dactylopteroidea. Several forms

that have not yet been anatomically investigated represent families—Caracanthidæ, Platycephalidæ, Agonidæ, and Rhamphocottidæ—exhibiting very peculiar characters, which must be reflected in their skeleton, and their exact relations remain to be ascertained; probably none belong to any of the superfamilies now established.[1]

The families hereinafter enumerated appear to be all well entitled to the rank, and are characterized by various anatomical peculiarities. The most closely allied pair, and which perhaps need future confirmation, are the Hexagrammidæ and Anoplopomidæ. All the families will be diagnosed and, in part, fully described in several memoirs prepared for publication in the Proceedings of the United States National Museum, and the anatomical characteristics of the crania will therein be illustrated. The comparative characteristics of the major groups, or superfamilies, are made known in the following analytical exhibit:

A. Scapular arch normal, the post-temporal and postero-temporal forming part, and the latter intervening between the post-temporal and the proscapula. Infraorbital chain with all bones entering into the orbital margin and functional, only partially extended over the cheek; with the third bone hypertrophied and developed as a stay impinging on the anterior wall of the preoperculum; post-temporal normally articulated with the epiotic and pterotic; intermaxillines with well-developed ascending pedicles gliding over the front of the prosethmoid.

1. Dentigerous epipharyngeals 3.3; actinosts moderate and inserted on posterior edges of hypercoracoid and hypocoracoid; ribs backwards borne on enlarged parapophyses.—*Scorpænoidea.*

2 Dentigerous epipharyngeals 1-1; actinosts large and partly intervening between the hypercoracoid and hypocoracoid; ribs sessile on the vertebræ.—*Cottoidea.*

B. Scapular arch abnormal, the post-temporal forming an integral part of the cranium and the postero-temporal crowded out of place by the side of the proscapula above or at the edge of the post-temporal.

1. Myodome (muscular tube) developed and cranial cavity open in front; prosethmoid and anteal normally connected by suture. Infraorbital chain with its anterior bones excluded from the orbit and functional as rostrolateral, the series covering the cheeks, the third a large buccal bone articulating with the anterior wall

[1] An examination of the *Platycephalidæ*, *Agonidæ* and *Rhamphocottidæ*, since the preparation of this note, has confirmed my suspicion that they are severally types of distinct superfamilies, *Platycephaloidea* (with families *Platycephalidæ* and *Hoplichthyidæ*), *Agonoidea*, and *Rhamphocottoidea*. I have been unable to secure specimens of *Caracanthidæ*, and know nothing of their anatomy.

of the preoperculum; post-temporal suturally connected with the epiotic and pterotic by inferior processes, and with the upper surface forming an integral part of the roof of the cranium; intermaxillines with the ascending pedicles atrophied and connected with the knob of the anteal (vomer) by ligament.—*Trigloidea.*

2. Myodome undeveloped, the cranial cavity being closed in front by expansions from the subtectals suturally connected with corresponding expansions of the prootics and the parasphenoid; prosethmoid and anteal entirely disconnected, leaving a capacious rostral chamber opening backwards mesially into the interorbital region. Infraorbital chain, with its second and third bones crowded out of the orbital margin by junction of the first and fourth, and leaving a wide interval between the suborbitals and the preoperculum; the first very long and extending backwards, the second under the fourth and the third developed as a small special bone (pontinal) bridging the interval between the second suborbital and the antero-inferior angle of the preoperculum; post-temporal suturally connected with the posterior bones of the cranium, and with the upper surface forming a large part of the roof of the cranium; intermaxillines with well-developed ascending pedicles gliding into the cavity between the anteal (vomer) and prosethmoid.—*Dactylopteroidea.*

The superfamily SCORPÆNOIDEA includes the families Scorpænidæ, Synanceidæ, Hexagrammidæ, (or Chiridæ), and Anoplopomidæ. The Caracanthidæ are generally associated with the Scorpænidæ and may belong to the superfamily, but this is doubtful.

The superfamily COTTOIDEA embraces the families Hemitripteridæ and Cottidæ.

The superfamily TRIGLOIDEA includes the families Triglidæ and Peristediidæ.

The superfamily DACTYLOPTEROIDEA is represented only by the family Dactylopteridæ.

It is probable that the Trigloidea and Dactylopteroidea will be hereafter segregated as representative of a peculiar suborder.—*Theo. Gill.*

THE COCOON OF PROTOPTERUS.—Professor Wiedersheim (Anat. Anzeiger) has collected together the various notices that have been written by J. E. Gray, A. D. Bartlett, Krauss, A. Günther, and others concerning the structure of the case or "cocoon" of the curious fish Protopterus, and describes the result of his own observations upon the subject. Krauss's description of the membrane surrounding the fish is substantially correct. It appears to be designed to protect the animal from damage during its æstivation;

but the source of the secretion composing it—whether the skin or a special apparatus—is not yet known. The manner in which the animal lies rolled up within its case is very singular and has not previously been described. The head and anterior part of the body are concealed or roofed over by the broad membrane of the lower lobe of the tail. Our author thinks it probable that the broad tail-fin serves the Protopterus for a purpose unheard of before, viz., as a breathing organ. The part which covers the head has a reddish tint, and it seems likely that it is permeable to air, even if we suppose it is in communication with the breathing-tube piercing the capsule.

A Grain-Eating Reptile.—Several lizards have been known to eat vegetable substances, among them *Uromastix acanthinus*, *Eumeces aldrovandi*, *Lacerta ocellata* and *Stellio vulgaris*. Johann von Fischer calls attention to the fact that *Uromastix hardwickii*, a Bengalese species in his possession, would take no animal food; but an examination of his excrement disclosed an abundance of starch granules. This led him to place before him various grains—rice, corn, etc.—which he ate with avidity. This is a new feature in reptilian diet. He also afterward ate various insects and drank—a fact which has not been witnessed in its relative, *U. acanthinus*. The chief food of the latter, lettuce, was neglected by the species in question, but it willingly ate straw and hay.

The Occurrence in Indiana of the Star-nosed Mole (*Condylura cristata* L.).—The star-nosed mole is rather generally distributed over northeastern North America. It is, apparently, common from Nova Scotia to New York and Pennsylvania, and Dr. C. Hart Merriam reports it as a "common animal along the outskirts of the Adirondacks, where it manifests a predilection for moist situations, being usually found in low ground and in the neighborhood of streams." West of New York and Pennsylvania, specimens had been taken by Dr. J. P. Kirtland at Cleveland, Ohio, and by Dr. J. F. Head at Fort Ripley, Minnesota, but only one specimen in the first and two in the second named State. In the Mississippi Valley, therefore, this interesting and curious mole would seem to be very rare. It therefore gives me pleasure to be able to report the capture of a specimen in this State. About the 5th of July last a fine adult male was obtained by Mr. J. C. Cunningham, near Denver, Miama county, Indiana. It was found lying dead near his door-step, where it had been dropped by the family cat, to whom belongs the honor of its capture. The specimen is now in my possession, through the kindness of Mr. Cunningham. This, so far as I know, is the first record of its capture in Indiana.—*B. W. Evermann*, Ind. State Normal School, Terre Haute, Ind.

ZOOLOGICAL NEWS.—ECHINODERMS.—The habitat of the starfish, *Echinaster decanus* Müller und Troschel, has not been known. Lately it has been dredged of Port Jackson, Australia. Professor F. Jeffrey Bell, in an account of the specimens, states that the species is remarkable for the large size of the pore areas, in which there are a large number of respiratory processes, and hence concludes that it lives in situations where respiration under ordinary circumstances would be difficult.

The brothers Sarasin have a note on the longitudinal muscles and "Stewart's organs" in the Echinothuridæ, in the *Zool. Anzeiger*, No. 273. The long muscles are of use in the vermicular movements of Asthenosoma. Concerning the function of "Stewart's organs," they have no opinion to offer.

Fifty species of Echinoderms, twenty-two Holothurians, thirteen Asteroids, six Ophiuroids, and nine Echini, have been collected at the Andaman Islands by Mr. Booley.

WORMS.—Mr. F. E. Beddard continues his notes on the earthworms. In the *Zool. Anzeiger*, No. 272, he states that the "mucous gland" described by Perrier in Urochæta "consists of a tube opening on to the exterior by a single orifice and branching distally into a number of tubules, each of which opens into the cœlom by a ciliated funnel," these funnels being disposed irregularly, and not metamerically.

In another note in the same number he describes briefly the salivary glands and capsulogenous glands in Perichæta. The former he regards as homologous of the septal glands of other Oligochætes. The capsulogenous glands, it is hoped, will furnish good characters for the discrimination of the species of this difficult genus.

Dr. Frederick Tuckermann notes a specimen of *Tænia saginata* of unusual size. Only a portion of the worm was obtained, but this consisted of 711 segments, and measured 7.455 metres in length. Comparison with other specimens led to an estimate that the whole worm consisted of about 1060 joints, and a total length of 7.655 metres.

According to Mr. R. Moniez, the eysticercus of the Tenebrios does not belong to *Tænia nana*, but, as is proved by the length and the number of its hooks, to *Tænia microstoma*, a species parasitic within the mouse. *T. nana* and *T. murina* constitute two distinct species, and the latter develops in the intestine of the rat without an intermediate host.

ARACHNIDA.—Duges describes (*Bull. Soc. Zool. France*, 1888) a new species of mite, *Geckobia oblonga*, which occurs, parasitic, upon the lizard, *Scoleporus spinosus*. The species is noticeable for the elongate organs, of problematical functions, which arise on either side above the base of the rostrum. They have an appendicular

appearance, are united at their bases, and terminate, each, in a toothed pincer.

FISHES.—M. L. Vaillant has recently, in a note upon the comparative dimensions of young and adult examples of *Alopias vulpes*, remarked that the size of the young is, among fishes, influenced by that of the parent, which commences to reproduce before its growth is complete. A specimen of *A. vulpes*, taken at Cette, measured 4.70 metres in length, and the largest of four fœtuses contained within its oviduct had a length of $1\frac{1}{2}$ metres. On the other hand, a female fox-shark, 1.17 metres long, also contained fœtuses.

It is not always that collectors note down the colors of the specimens while still alive, and thus the small collection of fishes from the Society Islands and Paumotu, made by Lieut. M. Trigon, becomes of value through the sketches accompanying it. M. Vaillant draws attention, in some prefatory remarks, to the losses incurred by attaching metal tags to the specimens by means of copper or iron wire instead of by vegetable fibre. Galvanic action is set up, and the scales and bones of the fishes, as well as the wire itself, are destroyed or fall apart.

A recent number of the *Izvestia*, of the Russian Geographical Society, contains M. Nicolsky's sketch of the fishing on Lake Aral, which is a valuable contribution to the ichthyology of that lake and of the Lower Arnu-daria.

After two periods of three years, each separated by one year of abundance (1883), sardines have returned to the French coast in greater abundance than ever, precisely at the period when the Government was commencing to inquire into the scarcity of that valuable little fish. M. Pouchet gave, in the *Revue Scientifique*, (June 11, 1887), reasons why 1887 might be expected to be a good year. Investigation of the ovaries of sardines of various sizes has convinced M. Pouchet that the sardine spawns at any season of the year, but always far from the coast, in other latitudes, or in inaccessible depths. The youngest sardines which visit the French coast are three or four months old, while those which are preserved in oil are about one year old and have not yet spawned. The sardine first spawns in the second year of its life.

Mr. and Mrs. C. H. Eigenmann catalogue the American species of Gobiidæ and Callionymidæ in the *Proceedings California Academy*, 1888. They enumerate seventy species belonging to the first, and four to the second, family. The new species are: *Gobius lucretiæ*, *G. garmani*, *G. hemigymnus*, *Microgobius eulepis*, *Barbulifer* (n. g.) *papillosus*, and *Callionymus calliurus*. A new genus, Clevelandia, is made for *Gobiosoma longipinnis*.

G. B. Howe (*P. Z. S.*, London, 1887), discusses the skeleton of the paired fins of Ceratodus, with observations upon those of the Elasmobranchs. His conclusions are that the characters of the

skeleton of the paired fins are inconstant, some of those of the praxial parameres of the pectorals and the basal mesomere of pectorals and pelvic fins; that a reduced metapterygrum is always present in the pectorals, and may occasionally be traced in the ventrals; and that the basal mesomere of the Ceratodus fin may conceivably have been derived from the metapterygium. The structural features of both paired fins of the Chimæroids are identical, and characterized by the absence of a mesopterygium, and the paired fins of Plagiostomes and Dipnoans have probably arisen from a type of fin most nearly represented by that of the living Chimæroids.

Prof. T. J. Parker describes and figures, in the Proceedings of the Zoological Society of London, the skeleton, fins, heart, brain, etc., of *Carcharodon rondeletii*, from specimens taken near Dunedin, New Zealand. A peculiarity in external form, scarcely noticed previously, is the depression of the tail just in front of the caudal fin, so much so that the width is more than double the height. Prof. Parker believes that this flattening, present also in Lamna, gives a combination of horizontal with vertical tail-fin, useful as a means of enabling the fish to rise rapidly from great depths.

Mr. Francis Day has lately published a work on British and Irish Salmonidæ. He regards the different forms of non-migratory trout known as Brook trout, Lochleven trout, Crasspuill trout, Estuary trout, Orkney trout, Cornish trout, Great Lake trout, Gillaroo trout, and Swaledale trout, as varieties of one species, and all the species of char as identical with *Salmo salvelinus*.

Reptiles.—Mr. C. M. Woodford has recently returned from the Solomon Islands with a collection of over two hundred reptiles, which have been examined by Mr. G. A. Boulenger. The fact that this large collection contained but four new forms indicates that the reptilian fauna of these islands is pretty well known.

Mr. F. E. Beddard notes the presence of a peritoneal fold in the genus Monitor, separating the lungs from the abdominal viscera, and corresponding to a similar structure in the Crocodilia.

Mr. G. A. Boulenger describes a Leptodactylus, three species of Lygosoma, *Typhlops aluensis*, and the Batrachia *Hyla lutea* and *Batrachylodes vertebralis*, from a collection made in the Solomon Islands by Mr. C. M. Woodford.

Two lizards, *Varanus niloticus* and *Chameleon owenii*, and the snakes *Naia haje* and *Dendraspis angusticeps*, were collected by Mr. Johnston, at a height of 2000 feet on the Cameroons Mountains.

M. L. Vaillant (Bull. d. l. Soc. Philo. de Paris) has recently described a new species of land-tortoise (*Testulo yniphora*) from one of the Comoro Isles, or from an islet in their vicinity. The carapace of the largest specimen is about fifteen and a half inches long,

twelve and a half inches wide, and nearly a foot in height. There is a small nuchal plate, and the plastron terminates anteriorly in a long, upturned tapering projection.

BIRDS.—Mr. D. D. Daly, at a recent meeting of the Zoological Society of London, gave an account of the caves in Borneo, from which the edible birds' nests are obtained. Of these, fifteen are known in North Borneo. Most of these are in limestone in the interior, but two are near the coast, and occur in sandstone strata.

Mr. H. N. Ridley found a new species of tyrant-bird in his explorations of the island of Fernando Norohna. Mr. R. Bowlder Sharpe has described it, under the name *Elainea ridleyana.*

Mr. R. S. Wray has found in the wing of the adult ostrich a vestigial structure representing the distal phalanges of digit III. (*P. Z. S.*, 1887.)

Among the thirty-five species of birds collected by Mr. C. Woodford, in the Solomon Isles, is a new crow, described by Mr. Ogilvie Grant as *Macrocorax woodfordi.*

Mr. Bowdler Sharpe has described (*P. Z. S.*, 1887) seven new species of birds, from a collection made by Mr. L. Wray in the mountains of Perak, in the Malay Peninsula.

Mr. R. S. Wray contributes to the *Proceedings* of the Zoological Society of London (1887), an important paper upon the morphology of the wings of birds.

MAMMALIA.—Dr. Dubois describes a sixth species of Anomalurus, under the name *A. chrysophœnus,* in the *Bulletin Société Zoologique* for January. It is most nearly allied to *A. pelii* of Temminck, and comes from West Africa.

The collection of mammals recently made in the Solomon Islands by Mr. Woodford, consisted chiefly of bats. Nothing was before known of the cheiropterous fauna of these islands. The new forms are *Pteropus gradis* and *Nesanycteris woodfordi,* nov. gen. et sp. The length of the head and body of a skin of *P. gradis* was 325 m. m., of which the head measured seventy-four m. m.